Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-22 (canceled).

Claim 23 (currently amended): A method for providing temperature control to a plasma processing chamber of a plasma processing apparatus powered by a coil adjacent to and outside the plasma processing chamber, said method comprising:

directly or indirectly measuring temperature internal to the plasma processing chamber;

comparing the measured temperature to a target temperature;

heating the plasma processing chamber by heating a plurality of thermal control blocks that include at least a heater element that is thermally coupled to the plasma processing chamber by a thermally conductive conformal thermal interface, wherein the thermally conductive conformal thermal interface is in physical contact with a surface of the thermal control block and a surface of the plasma processing chamber, and a cooling element arranged around the sides of the plasma processing chamber such that the thermal control blocks are thermally coupled to the plasma processing chamber~~, wherein the thermal control blocks are not thermally coupled to the coil~~; and

cooling the plasma processing chamber by actively cooling the plurality of thermal control blocks so that the cooling is provided by the cooling element through the heating element.

Claims 24-25 (canceled).

Claim 26 (previously presented): A method as recited in claim 23, wherein the thermal control blocks further include a thermal break element coupled between the heater element and the cooling element.

Claim 27 (previously presented): A method as recited in claim 23, wherein said method further comprises:

biasing the thermal control blocks against a first section of the roof portion of the plasma processing chamber, wherein the coil is placed adjacent to a second section of the roof portion different than the first roof portion.

Claims 28-31 (canceled).

Claim 32 (previously presented): A method as recited in claim 23, wherein the thermal control blocks further include notches configured to prevent RF energy from coupling with the thermal control blocks.

Claim 33 (previously presented): A method for providing temperature control to a plasma processing chamber of a plasma processing apparatus, which is energized by a coil adjacent to and outside the plasma processing chamber, said method comprising:

directly or indirectly measuring temperature internal to the plasma processing chamber;

comparing the measured temperature to a target temperature;

providing a thermal control block that is thermally coupled to the plasma processing chamber, said thermal control block having a heating element that is coupled to the plasma processing chamber by a thermally conductive conformal thermal interface, wherein the thermally conductive conformal thermal interface is in physical contact with a surface of the thermal control block and a surface of the plasma processing chamber, and a cooling element with a thermal break element coupled between the heater element and the cooling element;

heating the plasma processing chamber by heating the thermal control block that is thermally coupled to the plasma processing chamber; and

cooling the plasma processing chamber by actively cooling the thermal control block so that the cooling is provided by the cooling element through the thermal break, the heating element, and through the conformal thermal interface into the processing chamber.

Claim 34 (canceled).

Claim 35 (previously presented): A method as recited in claim 33, wherein the method further comprises:

biasing the thermal control block against a roof portion of the plasma processing chamber.

Claim 36 (previously presented): A method as recited in claim 33, wherein the thermal block includes notches formed therein to prevent RF energy from coupling with the thermal control block.

Claim 37 (previously presented): A method for providing temperature control to a plasma processing chamber of a plasma processing apparatus, said method comprising:

directly or indirectly measuring temperature internal to the plasma processing chamber;

comparing the measured temperature to a target temperature;

heating the plasma processing chamber by heating a resistive heating block that is coupled to the plasma processing chamber by a thermally conductive conformal thermal interface, wherein the thermally conductive conformal thermal interface is in physical contact with a surface of the thermal control block and is in physical contact with the roof of the plasma processing chamber;

cooling the plasma processing chamber by actively cooling the resistive heating block; and

preventing RF energy from coupling with the heating block.

Claim 38 (previously presented): The method as of claim 37, wherein preventing RF energy from coupling with the heating block is accomplished by including notches in the heating block to prevent RF energy from coupling with the heating block.

Claim 39 (previously presented): A method as recited in claim 38, wherein the cooling of the plasma processing chamber is accomplished using a cooling element in thermal contact with the resistive heating block wherein said cooling is accomplished by cooling the plasma processing chamber through the resistive heating block, thereby providing more uniform temperature profile to the plasma processing chamber.

Claim 40 (previously presented): A method as recited in claim 37, wherein said cooling of the plasma processing chamber by actively cooling the resistive heating block is accomplished by a cooling element in thermal communication with the heating block; and

wherein said cooling is provided by the cooling element through the heating block.

Claim 41 (previously presented): A method as recited in claim 40, wherein a thermal break element is coupled between the heating block and the cooling element.

Claim 42 (previously presented): A method as recited in claim 23, wherein said method further comprises:

biasing the thermal control block against a roof portion of the plasma processing chamber.

Claim 43 (previously presented): A method as recited in claim 23, wherein said biasing the thermal control blocks against a portion of the plasma processing chamber includes spring biasing the thermal control blocks against a roof portion of the plasma processing chamber.

Claim 44 (previously presented): The method as of claim 40, further including preventing RF energy from coupling with the heating block and the cooling element said coupling being prevented by including notches in the heating block and notches in the cooling element to prevent RF energy from coupling with the heating block and the cooling element.

Claim 45 (previously presented): The method as of claim 33 wherein the thermal break is configured such that it has a substantially lower thermal conductivity that the conformal thermal interface.

Claim 46 (previously presented): The method as of claim 23, further including preventing RF energy from coupling with the heating block and the cooling element said coupling being prevented by including notches in the heater element and notches in the cooling element to prevent RF energy from coupling with the heater element and the cooling element.

Claim 47 (previously presented): The method as of claim 46, wherein the notches in the heater element are aligned with the notches in the cooling element.

Claim 48 (previously presented): The method as of claim 33, further including preventing RF energy from coupling with the heating block and the cooling element said coupling being prevented by including notches in the heater element and notches in the cooling element to prevent RF energy from coupling with the heater element and the cooling element.

Claim 49 (previously presented): The method as of claim 48, wherein the notches in the heater element are aligned with the notches in the cooling element.